

L Number	Hits	Search Text	DB	Time stamp
1	0	29/592.1.ccls. and thin?film same electrochemical .	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/21 15:44
7	16	29/592.1.ccls. and thin?film	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/21 15:45
13	2	thin?film SAME anode adj layer SAME cathode adj layer SAME edges	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/21 15:48
19	12	thin?film SAME anode adj layer SAME cathode adj layer AND edges	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/21 15:48

AA. Special lines with Class 29, Metal Working:

Class 29 has several important relationships with this class 156 . Both classes take designated single-step processes, and both are locations for multistep processes for manufacturing designated products or using certain combinations of steps.

Single-step processes provided for in Class 29 include shaping particulate metal by pressure alone, burnishing, filing, mechanical joining of parts, etc., even when used in the manufacture of a product designated for Class 156, in section I, above. Likewise, where only an adhesive bonding step is claimed, the process is assigned to Class 156, even though a product designated for Class 29 is manufactured.

Multistep processes for Class 29 are of two types:

- (1) Those for making specified articles, enumerated in that part of the Class 29 subclass **401.1**
- (2) Multistep manufacturing processes not provided for elsewhere.

Insofar as processes of type (1) are concerned, these are assigned to Class 29, even when an adhesive bonding step is claimed as part of the multistep process, except for processes classifiable in subclasses **825.1**, which follows the category (2) rule given in the next paragraph.

Processes of type (2) are provided for in this class 156 when they claim:

- (a) Adhesive bonding combined with shaping of nonmetals.
- (b) Adhesive bonding combined with broad or nominally claimed metal shaping steps.
- (c) Adhesive bonding including steps for assembling the parts to be bonded.

Processes of type (2) are classified in Class 29 when they claim:

- (d) Adhesive bonding combined with specified metal shaping steps.
- (e) Adhesive bonding combined with mechanical joining, either broad or specific.

B. Laminating combined with other operations

1. This class provides for the combination of laminating with other working steps, however other classes provide for laminating for the manufacture of specific articles, or particular operations combined with laminating steps as set forth below:

2. SEARCH CLASS:

- 2, Apparel, subclasses ~~243~~ for processes for making apparel including a cementing step combined with other apparel manufacturing steps.
- 7, Compound Tools, appropriate subclasses for laminating tools combined with other working devices.
- 12, Boot and Shoe Making, appropriate subclasses for shoe making including laminating.
- 15, Brushing, Scrubbing, and General Cleaning, subclass ~~105~~ for tools of that class when combined with some other tool even though the Class 15 tool may be disclosed as having a laminating function. See the search notes in II. (A) above for the line between Class 15 and Class 156 as to tools, per se.
- 29, Metal Working, subclasses ~~1.1~~ through ~~25.42~~, ~~91~~, ~~592.1~~ through ~~623.5~~, and ~~825~~ through ~~899.1~~, for combined apparatus or processes for making specific articles set forth even though an adhesive bonding be claimed. This class 156 can provide for manufacture of these articles where a laminating step only is claimed. Subclasses ~~33~~ and ~~700~~ of Class 29 provide for assembly and shaping combined with other manufacturing means or steps. See subclasses ~~592.1~~ of Class 29 for the residual home for methods of making electrical devices and subclasses ~~729~~ for corresponding apparatus.

See section I of the class definition of this class 156 for those articles for which Class 156 is the residual manufacturing class.

With respect to general manufacturing processes, (i.e., articles not specifically provided for) the lines are as follows:

Class 156 Adhesive Bonding and Miscellaneous Chemical Manufacture.

- (1) Adhesive bonding combined with shaping of nonmetals.
- (2) Adhesive bonding combined with broad or nominally claimed metal shaping steps.
- (3) Adhesive bonding including assembly steps.

Class 29 Metal Working

- (1) Adhesive bonding combined with specific metal shaping steps.
- (2) Adhesive bonding combined with mechanical joining, either broad or specific.

Class 156 line note to 228

CLASS 156 Subclass Definition 49:

Processes under subclass 47 for joining end-to - end of at least two conductors and/or their coverings.

SEARCH THIS CLASS, SUBCLASS :

- 157+, for processes of joining in an end-to - end relationship of indefinite length lamina not intended to provide a conductive path between its ends.
- 502+, for apparatus for joining flexible indefinite length bodies end-to - end.

SEARCH CLASS:

- 29, Metal Working, subclasses 592.1+ for making of electrical devices, not elsewhere classified.
- 57, Textiles: Spinning, Twisting, and Twining, subclasses 22, 23 and 362 for splicing strands by a twisting or twining operation.
- 138, Pipes and Tubular Conduits, subclass 97, for processes and apparatus for repairing leaks in pipes and hose, including electric conduits.
- 140, Wireworking, subclasses 111+ for other processes and devices for joining or uniting wire.
- 164, Metal Founding, subclasses 91+ for composite article forming by a metal casting operation and particularly subclasses 103+ for processes of uniting two preforms.
- 174, Electricity: Conductors and Insulators, subclasses 21, 22 and 84+ for the structure of conductor joints.
- 219, Electric Heating, especially subclasses 50+, 78.01, 136+, 148, 603+, 633, and 765+ for bonding by use of electric heat.
- 228, Metal Fusion Bonding, appropriate subclasses for joining metals by a metallurgical bond as well as joining a metal to a nonmetal and joining two nonmetals by use of a metallic filler to effect a metallurgical bond. Joining a metal to a metal, a metal to a nonmetal or a nonmetal to a nonmetal is to be found in this class if the bond is effected with a nonmetallic cement or by fusion of a nonmetal part.
- 249, Static Molds, subclasses 83+ for molds for uniting a preform with molding material.
- 289, Knots and Knot Tying, for mere tying of cords or strands.

b. Once the determination has been made that structure exists in the composition or material noted above and it is singly disclosed or claimed for a battery, the patent is classified in this class (429).

B. LINES AND SEARCH NOTES TO ARTICLE OR PRODUCT CLASSES

1. As a general rule an article is classified, the class providing specifically for the same or a generic class which can take the same.

An exception to this rule is an article mentioned in name only and defined in terms of its composition or material is classified in one of the composition or material classes. (See "Lines With And Search Notes To Compound, Composition, And Material Classes," 2, above, and References to Other Classes associated with the above section.)

This class (429) provides for a battery combination comprising a casing, electrodes and a separator. Also various subcombinations of the above.

Usually the application or use of a current-producing device (battery) in combination with other devices is classified in appropriate classes. See References to Other Classes, below.

C. LINES WITH AND SEARCH NOTES TO PROCESS AND APPARATUS CLASSES

See References to Other Classes below.

D. LINES BETWEEN CLASS 429, CLASS 204, AND CLASS 205

Wherein structure or process is common to both classes, the following line is to be observed. Where combined subject matter of both Class 204 and Class 429 is claimed or disclosed, classification will be based on the proximate function, e.g., current production, (Class 429) and the production of a product (Class 204). Generic claims are to be classified in the generic class (204). Also see the Search Class notes below to Class 204 and Class 205.

REFERENCES TO OTHER CLASSES

SEE OR SEARCH CLASS:

- 16, Miscellaneous Hardware, appropriate subclasses for subject matter of that class adapted for use with battery structure. (See "Lines And Search Notes To Article Or Product Classes " above)
- 29, Metal Working, subclass 2 for apparatus and process for making metallic battery grids; subclasses 730 + for apparatus, and subclasses 623.1 + for process of making a battery not including the use of the same. (Process And Apparatus Class)
- 34, Drying and Gas or Vapor Contact With Solids, appropriate subclasses for processes and apparatus for treating a battery or part thereof by drying or gas /vapor contact with the same. (Process And Apparatus Class)
- 49, Movable or Removable Closures, appropriate subclasses for closures of that class. (See "Lines And Search Notes To Article Or Product Classes " above)
- 53, Package Making, appropriate subclasses for methods of and apparatus for

Class 228 Definition Relationship to Class 156

D. The Class of Adhesive Bonding

- 1.** Class 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, includes fusion bonding wherein:
 - a.** nonmetallic work parts are bonded directly together;
 - b.** metallic and/or nonmetallic work parts are bonded together by non-metallic filler (adhesive); or
 - c.** a metallic work part is bonded directly to nonmetallic work part by at least slightly melting the nonmetallic material (to effect a nonmetallurgical bond).
- 2.** This class 228 includes fusion bonding wherein:
 - a.** metallic work parts are bonded directly together;
 - b.** metallic and/or nonmetallic work parts are bonded together by metallic filler; or
 - c.** a metallic work part is bonded directly to a nonmetallic work part where there is no melting of the nonmetal (and a metallurgical bond is effected).

- 72, Metal Deforming, 199+ for rolling to form metal work in the absence of surface bonding.

159 **Removing of material:**

This subclass is indented under subclass 155.

Process in which the shaping operation includes separating some of the substances of the joined parts therefrom.

SEE OR SEARCH CLASS:

- 29, Metal Deforming, 557+ for a process of reshaping a one-piece blank by removing material therefrom.

- 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, ~~26~~
for etching shape a workpiece in the absence of metal fusion bonding.

*now
chemical
(etching in 216)
(as part of 156)*

160 **By cutting:**

This subclass is indented under subclass 155.

Process wherein the shaping includes the use of a sharp cutting edge to pierce and sever one portion of the work part(s) from another.

- (1) Note. The severed portion of the part may be scrap or may be a usable product.

SEE OR SEARCH CLASS:

- 83, Cutting, and see the search notes of that class for cutting of general utility.

161 **Producing internal cavity, aperture, or opening**

This subclass is indented under subclass 159.

Process wherein the shaping operation produces a void or recession in the work part(s) such that a cross-section can be taken there across which will show the void to be completely encircled by material of the part(s).

- (1) Note. The void in the work part(s) may extend all the way from one side to the other or may extend only part way therethrough.

162 **Abrading:**

This subclass is indented under subclass 159.

Process wherein the shaping is done by the action of a crystalline cutting tooth.